



NEWSLETTER OF THE LONDON CHAPTER,
ONTARIO ARCHAEOLOGICAL SOCIETY
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94-3

DOGGING IT IN BELIZE: MAYAN COASTAL ARCHAEOLOGY IN CENTRAL AMERICA

Laurie Jackson
UWO/ Northeastern Archaeological Associates

This month we go travelling again, this time to the Atlantic coast of Belize for some Mayan archaeology courtesy of Laurie Jackson. This will be our last presentation before the summer break, so come on out and hear about a place that'll remind you how hot and humid it gets around here in mid-July!!

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EXECUTIVE REPORT

Not much to report on the Executive side of things this month. With the help of Lynn Lennox we video-taped Bill Donaldson's speaker night presentation last month. Now that we have the thing it's available to anyone who would like to view it. The presentation was on the Hind Site and Terminal Archaic mortuary patterns and the assembled data is available nowhere else....at least until Bill and Stan publish their report!!

Jim Wilson, who is editing the next "Best of **KEWA**" volume for the Occasional Publications series, reports that he has now heard back from the two reviewers of several dozen articles, who have managed to whittle that pile down to a list of about 2 dozen. Jim and the rest of the Executive now get to refine the selection process further, before coming up with the final list of articles for the volume. No doubt there are many authors expecting their gems to be included. And while I'm sure you don't want to hurt anyone's pride...sorry Jim, binding restraints mean that we can't publish the entire last eight year's worth of articles!!

Neal reports good progress on the Curnoe and Fisher manuscripts, and still predicts that their release is close at hand (mid-summer, plus or minus).

SOCIAL REPORT

It looks as though the Chapter once again will avail itself of Ray Crinklaw's hospitality as the place to host the 1994 Chapter picnic. It is tentatively planned for sometime in August. Further information will be published in the next issue of **KEWA**. For those wondering, earlier plans to make the picnic into a weekend bus tour of the Lower Grand River sort of fizzled, once the scope and amount of work necessary to arrange the thing was realized. Oh well, maybe next year.

For anyone interested, it looks as though there will be a number of local volunteer excavation opportunities for members. Dave Riddell is planning to continue work on the Haagsma site in Alviston (40 minutes west of London), while Jim Wilson is also planning some work in the Komoka-Delaware area. Also, Chris Ellis is planning to continue his field techniques course on the Late Prehistoric Neutral Brian site, in east London, and is looking into starting up work earlier, so that Chapter members can work on the site. Wow! Lots of opportunity to catch a little sun, dig a little dirt, and find some neat finds! More information will be provided in the next issue of **KEWA**, but contact Pat Weatherhead for more information in the meanwhile.

EDITOR'S REPORT

This month's contributions come from the east. Jeff Bursey presents some Early Iroquoian ceramic data, with an eye to reviewing some of the more contentious views on Early Iroquoian cultural development put forward by J.V. Wright in a recent issue of **Ontario Archaeology**. Boy, I thought those Iroquoianists had already figured it all out.....NOT!!! Also included is another contribution by Charles Garrad on upset trade axes (not emotionally upset, of course!), this time from Neutralia. By the way, the "bin" of future **KEWA** articles has thinned in recent months (in fact, at this moment nothing is in hand, although we do have promises!). So if you've got something you'd like to shine up and submit, please do!

THE POTTERY FROM THE TARA & IRELAND SITES: THREE TERMINAL GLEN MEYER COMPONENTS IN THE BURLINGTON/CRAWFORD LAKE AREA

J.A. Bursey

Introduction

The Tara (AiGw-120) and Ireland (AiGw-39) Early Ontario Iroquoian (EOI) sites were salvage excavated in 1990 by staff of the Ministry of Transportation, Central Region, in advance of the construction of Highway 403 in the Burlington Area.

These sites should prove to be of particular significance for the study of Ontario's Iroquoian prehistory for a number of reasons. First, the location of these component's, southeast of the "Crawford Lake Cluster" of EOI and historic neutral components (Figure 1), is of interest because this region is believed to have been a sort of cultural "frontier" during both of the EOI and late prehistoric periods. Thus these sites may offer critical information for the cultural-chronological reconstructions archaeologists provide for these periods.

Also of particular significance was that, during the analysis of the ceramic vessel fragments from these sites, it became clear that the assemblages expressed classic Glen Meyer Early Iroquoian attributes, as defined by Wright's (1966) criteria. This raises an interesting interpretive problem, since the territorial definition of Glen Meyer is supposed to begin west of the Hamilton area. Tara and Ireland are, in fact, situated in a region Wright has identified as being part of the Pickering Early Iroquoian cultural manifestation. Indeed, the Bennett (Wright and Anderson 1969) and Gunby (Rozel 1979) sites, both assigned as Pickering, are situated on the Niagara Escarpment a few kilometres to the west of Tara and Ireland. If Pickering and Glen Meyer represent two distinct cultural communities, and particularly if Glen Meyer peoples are believed to have been subjected to a "cultural conquest" by Pickering peoples at the end of the Early Iroquoian period (Finlayson et al 1989; Wright 1990, 1992; Wright and Anderson 1969), why at there terminal Glen Meyer occupations at the Tara and Ireland sites? Thus the analysis of these two sites allow for an opportunity to assess both the nature of socio-political patterning during the Early Stage of the Ontario Iroquoian Tradition, and the nature of the transition to the Middle Stage of the Ontario Iroquoian Tradition (MOI; Wright 1966).

Readers should note that while a complete review of the artifact data from these sites is beyond the scope of this paper, in the following discussion relevant ceramic attribute data will be presented in enough detail to allow for a review of the material. Samples from Tara West (96 vessels) and Ireland (66 vessels) will provide most of the necessary information while the Tara East village (18 vessels) and the overlap area (7 vessels) will be discussed only as needed. Preliminary Analysis of the settlement patterns have been reported elsewhere (Fecteau et al 1991; Warrick 1991), and a full report on these sites is in preparation.

Early Iroquoian Development

It is important to begin any discussion on the socio-political patterning of the Early Iroquoian Tradition, and transition to the Middle Iroquoian Tradition by reviewing some of the implications of the "Pickering and Glen Meyer hypotheses" offered by Wright (1966, 1990, 1992), and critically reviewed by others:

First, Wright has argued that there were two large cultural groups during the EOI in southern Ontario: the Pickering located east of the Hamilton area and the Glen Meyer to the west. Wright distinguished these two cultural entities in part by employing a number of artifact classes, primarily decorative pottery attributes. The Bennett site (Wright and Anderson 1969) proved to be the type site of the Pickering expression of Early Ontario Iroquoians.

This distinction has been criticized by those who propose that the Early Iroquoian period is characterized by clinal variation in stylistic attributes across the north shores and drainages of Lakes Ontario and Erie (eg. Sutherland 1980, Williamson 1990). Advocates of this hypothesis argue that the distinctions between Pickering and Glen Meyer are based on a geographic bias in the focus of archaeological research. They point out that the type sites for the two groups used by Wright are located a considerable distance apart and therefore represent extremes in "clinal" variation across geographic space. Intervening sites, once found and excavated, will prove to be intermediate between the two type sites, in regards to ceramic decorative attributes. As well, it's worth pointing out that proponents of the "Clinal Variation" hypothesis further suggest that the Bennett site either derives from an unrelated cultural group (Ambrose 1980), or should be reassigned to the early Middle Ontario Iroquoian Uren substage (Williamson 1990).

Unfortunately, support for either position has been hampered by a paucity of data from the intervening region between "classic" Glen Meyer and "classic" Pickering.

The second, much more contentious hypothesis offered by Wright (1966, 1990, 1992) is that the EOI period ended when the Pickering peoples suddenly expanded the westwards and conquered Glen Meyer peoples. Evidence offered in support of this hypothesis includes a sudden shift in settlement patterns at the end of the EOI, and the sudden appearance of various "Pickering" artifact attributes on sites across southern Ontario. Crucial to Wright's position has been the identification and interpretation of the Bennett site as late Pickering (Wright 1992). This has led to repeated use of the Bennett site as a "typical" Pickering component (ie. Wright 1992) in comparisons with Glen Meyer and Uren sites. While it is undisputed that the appearance of horizontal push-pull collar motifs and ribbed paddle and checked stamp body treatment occurs throughout southern Ontario at the end of the EOI, opponents of the "Conquest Hypothesis" have argued that little or no substantive evidence exists to support a model involving territorial conquest of one cultural group over another. Indeed, there has really been no evidence offered that the Pickering community had either the population base or the political cohesion to accomplish an invasion of their western neighbours, whatever their motivations might have been.

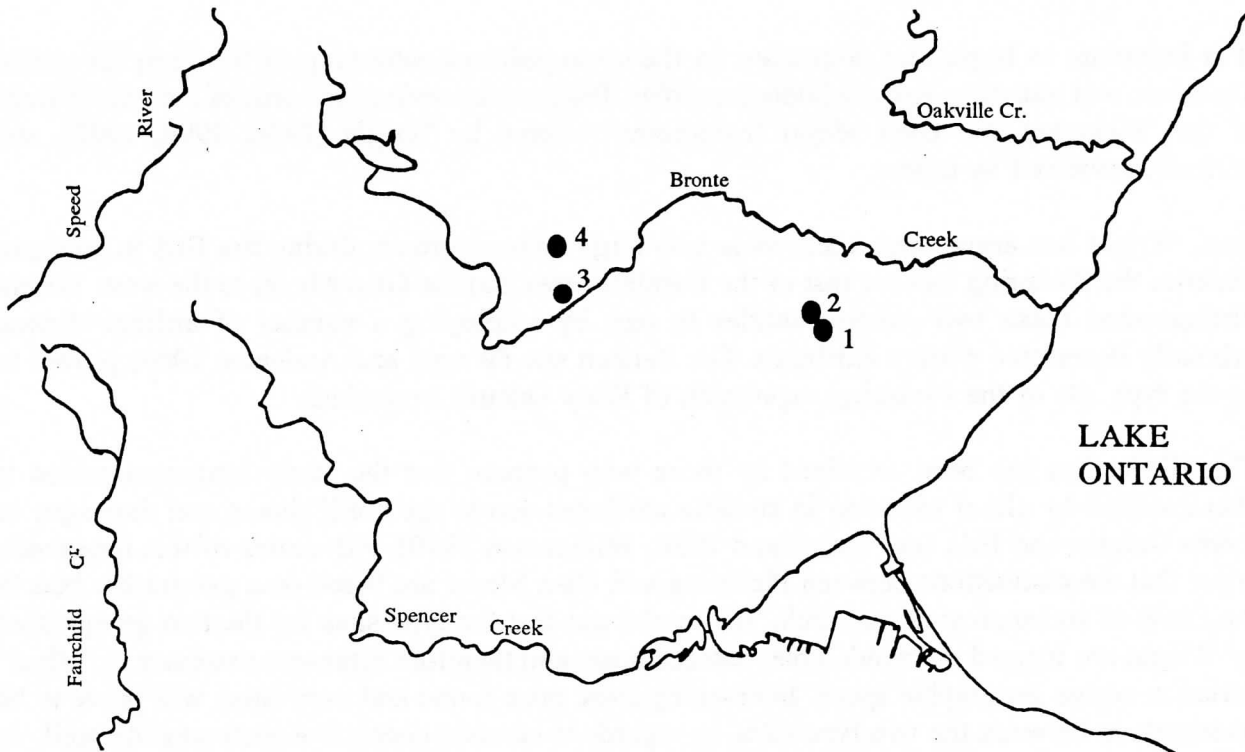


Figure 1: Location of Selected Sites. 1- Tara; 2- Ireland; 3- Gunby; 4- Bennett.

The Tara and Ireland sites provide an opportunity to perhaps settle this dispute in that, as late representatives of the EOI in the Crawford Lake area, they help establish an "ethnic" affiliation of the EOI populations in this region, in relation to the cultural constructs already provided for classic Glen Meyer and Pickering. This in turn may provide us with a greater understanding of the significance of the Bennett and Gunby sites. Assessing the significance of the Tara and Ireland sites, however, requires establishing two interconnected inferences: their chronological placement and ethnic affiliation.

At this point it would be beneficial to digress a bit and emphasize that the "ethnic" identities discussed here are not intended to reflect linguistic, political, religious or even social divisions. Instead, the "ethnic" divisions offered are intended to be simple archaeological constructs determined and defined on the basis of discontinuities in the geographic distribution of key attributes of certain artifacts, specifically the decorative attributes of pottery. Whether the inferences presented here can reflect broader social, political or linguistic identities for the people who produced different styles of pots, will require a more detailed discussion of the available archaeological record than can be offered here.

However, it is crucial to emphasize the importance of recognizing the inter-connectedness of ethnicity and chronology, especially in this particular case. In the absence of well-defined

stratigraphic relationships or precise methods of absolute dating, chronological placement of archaeological assemblages requires some method of relative dating, such as seriation. Successful chronological seriation, in turn, requires the use of assemblages from a single population, or small number of closely related populations (Dunnell 1970).

To some degree, then, choosing assemblages to include within a seriation requires some inferences to be generated concerning the ethnic relationships of the sites to be used. This is particularly true when a possible case of population replacement or cultural disruption might have occurred. A frequently used method employed by archaeologists is to restrict the components to be analyzed to a relatively small geographic area, such as a river drainage, and to assume that no drastic changes have occurred within the cultural repertoire of those who occupied these sites. Such changes do occur, however, and identifying these transformations and their causes, circumstances and implications is a significant goal of archaeology (Rouse 1986).

Establishing ethnic affiliation, in turn, requires some knowledge of chronological placement. Quite simply, identifying prehistoric ethnic groups requires isolating non-random discontinuities in the distribution of artifacts, or key attributes of artifacts, recognized as communicating or reflecting some level of social identity. Because cultural groups usually also vary through time, for any variety of reasons, it is necessary to ensure that the assemblages to be compared derive from a relatively similar time period. It is possible, for example, that changes which affect one population will affect neighbouring populations at a later time. This can cause closer resemblances between assemblages of different time periods than between contemporaneous assemblages (Deetz and Dethlefsen 1965).

It is just such a circumstance which is of concern to us here. Wright has proposed that a relatively drastic change occurred at the end of the Early Iroquoian period in southwestern Ontario as a result of a conquest of indigenous populations - the Glen Meyer peoples - by populations originating from the east - the Pickering peoples. Support for this scenario is dependent on demonstrating similarities in the post-conquest cultural patterns of populations in southwestern Ontario with pre-conquest cultural patterns observed in the east, or Pickering region (Wright 1992). Establishing the ethnic affiliation of the Tara and Ireland occupants, therefore, requires establishing first whether the sites were occupied before or after the inferred conquest and then comparing these assemblages with others of the same relative time period.

Dating

The chronological placement of the Tara and Ireland sites is indicated by six radiocarbon dates received from the Brock University Radiocarbon Lab (Table 1). After calibration, all six, representing two dates from each of the villages, cluster in the 13th century. While the imprecision of radiocarbon dating is widely acknowledged, the uniformity of the results obtained strongly suggest occupation of all three sites within the century preceding the beginning of the MOI (ie. Dodd et al 1990).

TABLE 1:
Radiocarbon Dates From the Tara and Ireland Sites

Site	Lab Number	Uncorrected Date (B.P.)	Calibrated to 1 Sigma (A.D.) (after Stuiver & Pearson 1986)		
			Minimum	Mean	Maximum
Tara West	BGS-1524	725 ± 85	1229	1274	1295
	BGS-1530	730 ± 80	1229	1272	1290
Tara East	BGS-1525	750 ± 120	1170	1267	1374
	BGS-1526	840 ± 80	1047	1216	1265
Ireland	BGS-1527	790 ± 90	1166	1252	1279
	BGS-1528	840 ± 90	1043	1216	1267

As part of the ceramic analysis, pottery types, as defined by MacNeish (1952), Ridley (1958) and Wright (1966) were employed and are presented in Table 2. The high proportion of EOI pottery types, particularly Glen Meyer types, further supports the relative placement of these site.

A relatively late date within the EOI Stage, in agreement with the C14 dates, is also indicated by the following observed ceramic type and attribute data from these sites.

- 1) The near absence of cord-wrapped stick decoration (consisting of one cord-wrapped stick exterior and one each of cord-wrapped stick on the lip and interior at the Tara West site). While subject to regional variability, early Glen Meyer sites have appreciable amounts of cord-wrapped stick ceramic decorative treatment (eg. Noble and Kenyon 1972; Stothers 1977) while later sites do not (eg. Noble 1975, Williamson 1990).
- 2) The high frequency Of collared or collar-like upper rims (57% at Tara West and 60% at Ireland).
- 3) The presence of MOI "types" (including Middleport Criss-Cross, Ontario Oblique, Ontario Horizontal, and Middleport Oblique) in appreciable quantities (combined at 35% at Tara West and 37% at Ireland).
- 4) Relatively high frequencies of other MOI attributes such as horizontal rim and neck incising, interior and neck decoration, etc.

TABLE 2:
Pottery Types From the Tara and Ireland Sites

Ceramic Type	Tara West	Tara East	Tara Overland	Ireland
Woodsmen Corded (& Ripley Plain)	29	7	2	24
Niagara Collared	4			
Glen Meyer Linear Stamped	3	3		1
Ontario Oblique	17	4	1	17
Stafford Dentate	4			2
Middleport Criss-Cross	8		1	5
Middleport Oblique	5	1		
Goessens Necked	1			
Scugog Classic Bossed	1			
Ontario Horizontal	4		1	3
Gossens Punctate	4			
Glen Meyer Necked	16	3	1	14
Iroquois Linear			1	
TOTAL	96	18	7	66

Attributes which indicate that these sites do not date to the MOI include the near absence of horizontal interrupted linear decoration, or "push-pull" incising. Also virtually absent is evidence of ribbed-paddle or check stamped body treatment. As well, interior punctates with exterior bosses are present in appreciable quantities at Tara and Ireland, but are absent or present in low frequencies in later assemblages.

In summary, the evidence from available radiocarbon dates and ceramic attribute data strongly suggest occupation of these sites in the thirteenth century, just prior to the beginning of the Middle Stage of the Ontario Iroquoian Tradition. A synchronic analyses to establish ethnic affiliation of these sites, then, requires comparison with other "pre-conquest" sites, preferably dating to the twelfth or thirteenth centuries A.D.

Ethnic Affiliation

The ethnic affiliation of the Tara and Ireland sites was first suggested during the analysis of the body sherds. Specifically, as noted above, ribbed paddle surface treatment was completely absent from these sites with the exception of one fragmentary sherd from the ploughzone of the Tara West village and one neck sherd from the Ireland site. Check stamping was not observed at all. These surface treatments have been reported from all Pickering sites to date, with the exception of the Auda (Kapches 1981: 17, 1987: 170) and Miller sites where no ribbed paddle, per say, was reported (Kenyon 1968).¹ These surface treatments, however, are absent or present in low frequencies on most Glen Meyer sites (eg. Noble 1975). All Tara and Ireland vessels are cord impressed with varying degrees of smoothing performed. This surface treatment is the predominant form found on Glen Meyer sites (eg. Noble 1975; Williamson 1990). It should be noted, however, that scarified sherds were not evident at the Burlington sites though this surface treatment has been reported from both Glen Meyer and Pickering sites.

Rim sherds shed considerable more light on the ethnic identity of the Tara and Ireland site inhabitants. Present in low frequencies is the push-pull motif. One rim assignable to the type Iroquois Linear (MacNeish 1952) was recovered from the ploughzone in the overlap between the two Tara villages, and one distinctly Pickering-like rim, with dentate stamps over horizontal push-pull, was recovered from the Tara West midden. Pickering sites have this motif present in frequencies of 10 to over 50% (eg. Kenyon 1968, Ambrose 1980, Pearce 1977, Reid 1975a) while Glen Meyer sites seldom, if ever, exhibit this motif (eg. Wright 1966, Noble 1975).

Dentate stamping on the exterior of rim sherds has been offered as another key attribute for distinguishing Pickering from Glen Meyer assemblages. At Tara West and Ireland, dentate stamping is present in frequencies of less than 5%. This technique is present in frequencies of 30 to 60% for Pickering sites but is only present in small percentages (5% or less) from sites like Stafford, Goessens and Roeland (ASI 1989; Wright 1966).

Punctate data from these sites support the conclusions presented above. Punctate-segregated exterior bosses, a key marker for Pickering sites (eg. Reid 1975a, 1975b) were completely absent from the Burlington sites while the punctates present (31% of the vessels from Tara West and 22.2% from Ireland) consisted of interior punctates/exterior bosses except for two cases of exterior punctates at Ireland.

In sum, all three of the sites investigated (including the overlapped area) produced a majority of vessels that are either plain (usually with cord marking) or decorated by simple stamping or incising and are constructed on corded bodies. This clearly indicates a Glen Meyer affiliation for these sites. Punctate data also supports this conclusion. While Pickering influence is present in

1. Kenyon described over 30% of the body sherds from Miller as being "cord-wrapped paddle" (1968:33), which appear to be corded in some of the plates provided in the report. A re-examination of the ceramics from the site is needed to confirm this.

the form of a small number of sherds recovered from these sites, these artifacts stand out in stark contrast to the rest of the assemblage, in terms of precision in application of motif and careful finish of the surface treatment. There is, therefore, no support for the "Clinal Variation Hypothesis", since these sites have a clearly discernible Glen Meyer pottery decoration complex. This affiliation is further illustrated in Table 3.

A cautionary note should be offered here. While it is maintained that there are clear differences between classic Pickering and Glen Meyer pottery assemblages, it is not suggested at this time that these differences reflect broader aspects of Early Iroquoian culture. Differences in decorative attributes, for example, might simply reflect isochrestic variation (Sackett 1990); that is, simply different ways of decorating pots not intended to convey or reflect cultural identity.

An alternate notion, which the author is exploring, is that the peoples reflected by classic Pickering ceramic traits either invented or learned the paddle and anvil technique of constructing pots, as reflected by the appearance of ribbed paddle and checked stamp surface treatment, while corded pottery found on more western sites actually predates the appearance of this technology. Taking this notion further, perhaps the late Early Iroquoian occupations of the Burlington area, as represented by the Tara and Ireland sites, were the result of a recent migration into this region from the west, following a population increase in areas like the Norfolk Sand Plain. After the occupation of the Burlington/Crawford Lake area, communication with the east may have increased, allowing for transmission of paddle and anvil technology. These notions will be explored in more detail in a later publication.

Discussion

Assuming these sites have been demonstrated to be associated with the late Glen Meyer period, it is possible to reappraise other sites in the general area. In particular Gunby and Bennett can be re-examined in light of the Tara and Ireland findings. Specifically, if Tara and Ireland are late Glen Meyer, how can we explain Gunby and Bennett as terminal Pickering?

There would seem to be three alternate hypotheses:

- 1) There were both Pickering and Glen Meyer sites in this region in the late thirteenth century.
- 2) The occupants of the Gunby and Bennett sites had displaced earlier Glen Meyer inhabitants from the area
- 3) Gunby and Bennett are in fact not Pickering but actually Uren substage (MOI) sites. For the reasons discussed below, this hypothesis is preferred.

Comparison of pottery attribute data from undisputed Pickering sites, as presented in Table 3, with two undisputed Uren sites (Uren and Barrie), as presented in Table 4, clearly demonstrates differences between Pickering and Uren sites. These differences are most clearly seen in the

frequencies of dentate stamping, punctate-segregated exterior bosses and ribbed paddle body surface treatment. When both the Bennett and Gunby sites are added to Table 4, they clearly exhibit closer affiliations with the Uren sites than to either Pickering or Glen Meyer sites.

TABLE 3:

Range of Frequency Percentages for Selected Ceramic Attributes (rounded to the nearest 5%)
for Selected Early Iroquoian Sites

Ceramic Attributes	Glen Meyer Sites	Burlington Area Sites	Pickering Sites
Rim Sherds: Push-Pull Technique	0%	0 - 2%	10 - 55%
Dentate Stamp	1 - 5%	2 - 5%	30 - 65%
Punctate Segregated Ext. Bosses	0%	0%	20 - 60%
Body Sherds: Ribbed Paddle	1 - 10%	<0.1%	0 - >10%
Checked Stamp	0%	0%	10 - 30%
Scarified	2 - 35%	0%	0 - 5 %

Glen Meyer Site Sources:

Goessens (Wright 1966, 1992); Stafford (Wright 1966); Van Besien (Noble 1975).

Pickering Site Sources:

Miller (Kenyon 1968; Reid 1975a); Boys (Reid 1975b); Richardson (Pearce 1977); Bolitho (Ambrose 1980).

Punctate segregated exterior boss data was not available for the Miller site; Body sherd data was not available for Bolitho; Ribbed Paddle treatment was not available for Miller.

A further observation of the Gunby site is also now possible. The Gunby site was interpreted as a terminal Pickering site (Rozel 1979). Rozel, however, appears to have never questioned the Pickering status and, in seriation, used Reid's (1975a) criteria for Pickering to arrive at a date later than Bennett. A simple examination of Rozel's comparative tables (Tables 60 - 63), however, indicates affiliation with Glen Meyer, particularly seen in the high frequencies of plain and cord-impressed rims and the low frequencies of dentate stamped and push-pull rims. A Glen Meyer affiliation is also suggested from the bone and lithic artifact assemblages (Rozel 1979: 159-162).

TABLE 4:

Range of Frequency Percentages for Selected Ceramic Attributes (rounded to the nearest 5%)
for Uren Sites

Ceramic Attributes	Uren Sites	Gunby	Bennett	Barrie
Rim Sherds:				
Push-Pull Technique	30%	20%	60%	< 50%
Dentate Stamp	1%	1%	<5%	<5%
Punctate Segregated Ext. Bosses	1%	<5%	10%	7.5%
Body Sherds:				
Ribbed Paddle	>50%	40%	<40%	>50%
Checked Stamp	<10%	5%	<5%	10%
Scarified	1%	0%	1%	2.5%

Uren Source: M. Wright 1986

Gunby Source: Rozel 1979

Bennett Sources: Wright and Anderson 1969; Wright 1992

Barrie Source: R. Sutton, pers. comm., based on a combined re-examination of Ridley's collection and 1992 excavation results (Rim Sherds: 333; Body Sherds: 1892).

Gunby's Push-Pull total includes "Braided Cord" and "Stamp String Dragged" which appear to be "imitation push-pull" (Rozel 1979: 184, 221).

Despite the Glen Meyer hallmarks at Gunby, the strong presence of push-pull decorated rims and ribbed paddle body sherds strongly suggest that the site can be best interpreted as an early Uren substage MOI site, with slightly more Pickering influences evident than at Tara or Ireland. However, typical Pickering attributes of dentate stamping and punctate-segregated exterior bosses are present in frequencies much too low to indicate a Pickering affiliation for Gunby. Rozel's interpretation of his seriation (Rozel 1979: 156), now may be reread as the Gunby site being less Pickering-like than Bennett, and thus probably dates earlier.

With the recognition of these five sites in the Crawford Lake area as being Glen Meyer or Uren, with increasing Pickering influences in pottery motifs and surface treatment showing up through time; and neither Pickering as currently defined or a clinal mixture (ie. "Pick-Meyer"), a key tenet of Wright's Conquest Hypothesis is challenged. Specifically, since support for the

hypothesis has rested so heavily upon the Bennett site being Pickering, a serious re-evaluation of this hypothesis is in order.

The significance of these inferences, however, extend beyond this single issue. If late EOI sites east of the Crawford Lake area exhibit clear affiliation with either the Glen Meyer or the Pickering, and not a clinal mixture of both, what might this indicate about the political boundaries of later tribal groups? The rough similarity between the eastern limit of Glen Meyer sites and the eastern limit of the Neutral confederacy seems unlikely to be coincidence. Can it be, then, that the antecedents for this later political boundary did exist in the EOI even though MOI and later sites do not appear to maintain this dichotomy in their material culture, at least as presently understood? Resolution of these issues will require considerably more study of both artifacts and their cultural/historical context.

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Charles Garrad

In a previous article in KEWA (Garrad 1993) possible evidence was offered for the blacksmithing process known as "upsetting" on two seventeenth century iron trade axes, one from Huronia (Ste. Marie 1) and one from Petunia (Plater-Martin, BdHb-1). "Upsetting" is a method of restoring utility to a blade that is too badly damaged to resharpen by filing or cold hammering. The damaged edge is cut away and a new edge created by forging. This process requires a bellows-forge, a heavy anvil and a competent blacksmith.

Two criteria were suggested by which an "upset" axe might be recognized. Firstly, the process visibly shortens the axe to create a distorted appearance, creating a measurement ratio between the maximum width (at the cutting edge) to maximum overall length of being higher than .056. This figure was achieved by a study of a number of seventeenth century iron trade axes in which it was found that the blade/length ratio is usually very close to 1:2, i.e. 0.5, ranging from 0.445 to 0.56. It was concluded that figures outside this range were abnormal and indicated modification of the axe.

The second criterion was the effect of reforging on the blade. If much of the blade's original taper was retained there would be a radical change in shape near the cutting edge. Alternatively if the entire blade was reforged to create a consistent taper to the cutting edge, the original rod-punch die marks might be obliterated during the process and perhaps replaced by unusual, improvised substitute marks. The marks on the Plater-Martin axe were very unusual and were apparently improvised.

A third possible "upset" iron trade axe is now reported, from Neutralia. It is in the collections of the Haldimand County Museum, Cayuga, Ontario, where it was measured and recorded by Thomas "Tim" Kenyon (n.d.).

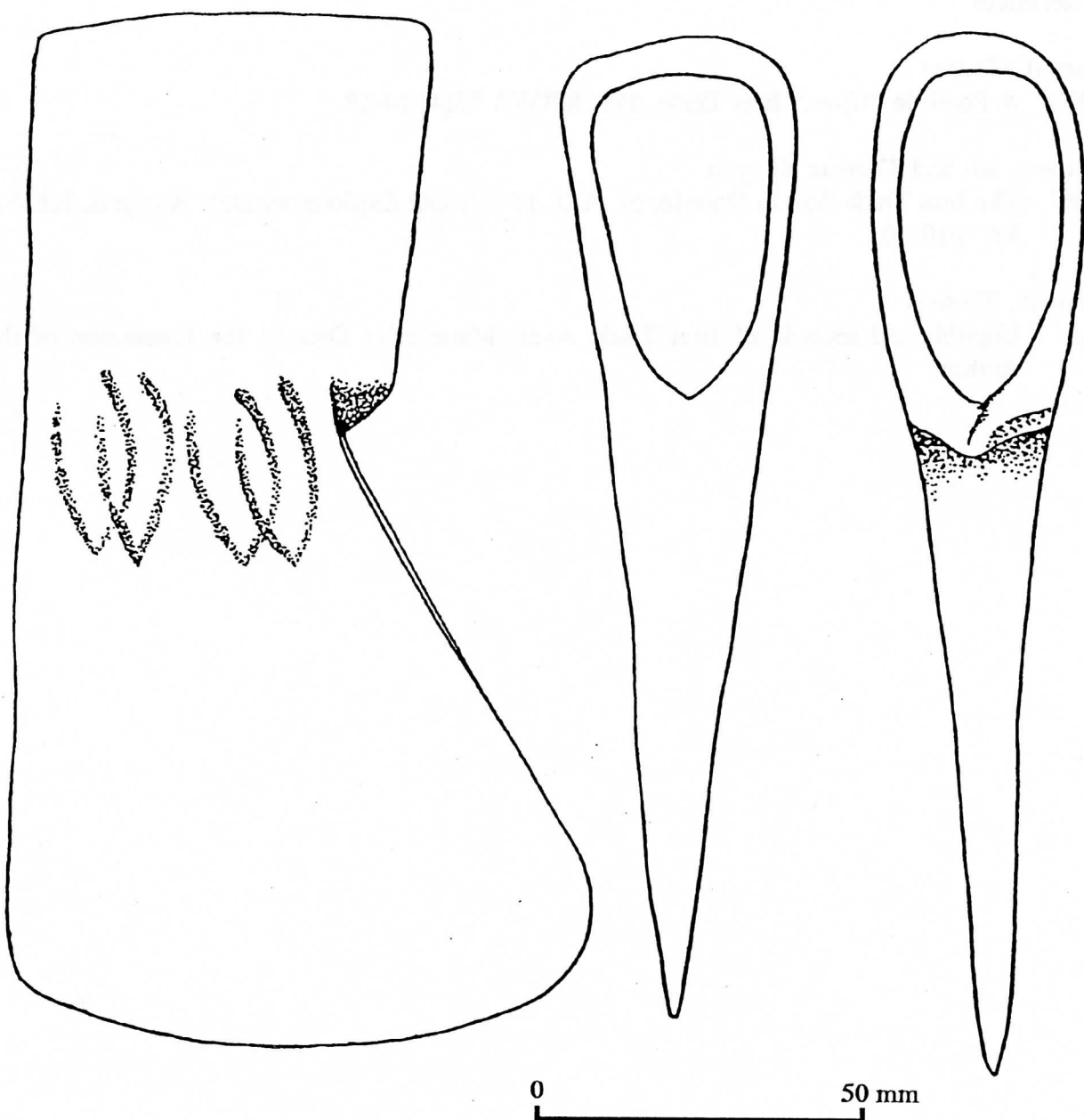
The maximum width of this axe at the cutting edge ('Q' using the Kenyon & Kenyon method, 1987) is 94 mm. The overall length of the axe ('B') 164 mm. The ratio indicated, 0.57, is outside the "normal" range.

During his examination of the axe, Tim speculated that "origin[ally the] axe was longer, perhaps 190 mm. - broken? then resharpened to present length." The Q/B ratio using the suggested length, 94/190 equals 0.49, falls comfortably within the normal range and is thus probable.

The cross-sectional drawings (Figure 1) indicate that although the axe was presumably shortened, the taper to the cutting edge is consistent. This suggests that the axe blade was reforged rather than resharpened. This is supported by the presence of unusual markings, presumably replacing original punch-die marks lost during the reforging. The new marks appear to have been improvised from folded scrap strap stock, a similar process, although with a different visual result, than was deduced for the Plater-Martin axe. It is not known why it was important to add

obviously improvised and unusual substitute markings.

The subject axe seems to be a typical pre-Dispersal, seventeenth century trade item of European origin, presumably imported through the French-Iroquoian trading system, as were also the two previously reported. The "upsetting" of this and the other axes required access to a forge, anvil and blacksmith. During this period there was only one forge in Ontario, that of Louis Gaubert at Ste. Marie-among-the-Hurons, 1639-1650. There is little doubt that the two axes previously reported had convenient access to Gaubert, but it would seem less likely, at least at first thought, that an axe from the County of Haldimand would have the same probability of access to the



forge at Ste. Marie. Unfortunately the County of Haldimand museum has no provenance data for this axe to confirm it is a local find. Should the axe prove to be from historic Neutria it will gain added interest as a possible example of trade goods of French origin first used and then recycled to the Neutrals by the Petun or Huron.

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